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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/720,287 | 05/10/2001 | Robert Klein | R00208US (#9 | 1252 |

7590 02/24/2003

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| EXAMINER | |
|---|---|
| GHALI, ISIS A D | |
| ART UNIT | PAPER NUMBER |
| 1615 | |

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/720,287 | KLEIN ET AL. | |
| | Examiner | Art Unit | |
| | Isis Ghali | 1615 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3-9 and 11-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *9* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

The receipt is acknowledged of applicants' IDS, filed 08/12/2002; and request for extension of time and amendment B, both filed 11/20/2002.

Claim 2 has been canceled, thus, claims 1, 3-9, 11-15 are included in the prosecution.

1. Claim 1 is objected to because of the following informalities: the word "is" at the end of the 6th line of the claim is in appropriate. Appropriate correction is required.

***2. The standing rejections:***

***Claim Rejections - 35 USC § 103***

Claims 1, 3-9 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,683,711 ('711) in combination with US 4,954,343 (343).

US '711 discloses a transdermal patch comprising estradiol and norethisterone in a supersaturated state in adhesive matrix and the viscosity of the adhesive matrix can inhibit crystallization of the supersaturated adhesive (col.6, lines 31-35; col.8, lines 41-47; col.9, lines 23-25; col.10, lines 52-58). The adhesive comprises acrylate polymers, such as butyl methacrylate and dimethylaminoethyl methacrylate (col.7, lines 50-60; col.8, line 5).

The reference does not teach butyl methacrylate and dimethylaminoethyl methacrylate as crystallization inhibitors. However, the reference teaches that the high viscosity of the adhesive inhibits the crystallization.

US '343 discloses a dermal pharmaceutical preparation comprising a pressure sensitive adhesive comprising methacrylate having an amino group to maintain the drug in a dissolved state and inhibits crystallization (abstract; col.1, lines 30-45). Examples of the amino containing adhesive include methyl methacrylate (col.2, lines 16-34). Examples of the drug to be delivered by this formulation are progesterone and estradiol, used individually or in combination in an amount of 0.1 to 30 % (col.4, lines 21-31, 56-59). The adhesive layer has a support layer and has a thickness of 5 to 1000 micrometer (col.4, lines 60-67).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to obtain a transdermal drug delivery device of US '711 comprising steroid hormones and PSA wherein the steroids are in supersaturated concentration and replace the PSA with the amino group containing polymers of US '343, with reasonable expectation of success of inhibiting crystallization of the drug in the transdermal drug delivery device. Motivation would arise from the teaching of US '343 that the amino-group containing polymer maintains the drug in dissolved state and provides excellent drug liberation and adhesion to the skin.

***Response to Arguments***

3. Applicant's arguments filed 11/20/2002 have been fully considered but they are not persuasive.

**Applicants' Arguments:**

- US '711 disclosed a patch where the concentration of active ingredients are exceeded on application of the patch to the skin and contains estrogen and progesterone. The patch contains vitamin E and its derivatives. The reference disclosed diaminoethylmethacrylate, but does not disclose the specific compositions: butyl methacrylate, diaminoethylmethacrylate, and methyl methacrylate, or any of the amino-group containing polymers.
- US '343 teaches PSA which is copolymer comprising (meth)acrylamide comonomer that keeps the drugs in dissolves state and comprises "amine" group and not "amino" that serves as crystallization inhibitor. Examples are carried out with hydrophilic drugs, and estradiol is not hydrophilic and one having ordinary skill in the art would not expect to prevent crystallization of estradiol using PSA comprising (meth)acrylamide containing amine or amide group not the amino-group containing polymer.
- Combination of US '711 and US '343 neither teaches nor suggests every element of the present invention and the problem solved by the present invention is not taught by the prior art in combination.

**Examiner's Position:**

- US '711, as applicants themselves admit, teaches transdermal patch containing the amino-group containing polymer diaminoethylmethacrylate, estradiol and norethisterone acetate, where the drugs are in supersaturated concentration, and that what applicants are claiming. The compositions: butyl methacrylate, diaminoethylmethacrylate, and methyl methacrylate all together compose one member of a Markush group, thus, it is not a requirement of the claims. The claims are directed to composition and the intended use of individual ingredient is not patentably significant in composition claims. The reference disclosed that the high viscosity of the PSA matrix containing dimethyaminoethyl methacrylate can maintain the supersaturated state in stable condition for long time since crystallization is inhibited. Thus, the art recognized inhibiting the crystallization by manipulating the PSA of the matrix, as desired by applicant. The expression "comprising " permits the presence of other ingredients such as vitamin E and its derivatives and does not preclude the presence of other ingredients, active or inactive, even in major amounts. See *Moleculon Research Corporation v CBS, Inc.* 229 USPQ 805, *In re Baxter* 210 USPQ 795, 803. In any events, applicants are claiming anti-oxidants and anti-aging agents and vitamin E in anti-oxidant and anti-aging.
- US '343 clearly teaches PSA containing (meth)acrylamide having amino group, col.2, lines 20-21, as disclosed by applicants, and meanwhile, applicants are

claiming polyacrylamide, and not excluding them. Formula I contains both amide and amino groups. Even the examples teach only hydrophilic drugs, the reference disclosed the specific drugs disclosed by applicants. A reference is relied upon for all that it would have reasonably suggested to one having ordinary skill in the art including non-preferred embodiments. Examples and preferred embodiments do not constitute a teaching away from the broader disclosure or non-preferred embodiments.

- The use of patents as references is not limited to what the patentee describe as their own invention or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain. In any events, the present invention is related to the problem of inhibiting crystallization of supersaturated composition comprising steroids, and both of US '711 and US '343 dealt with that problem using the same concept as applicant, and that is manipulating the PSA itself.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final áction.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isis Ghali whose telephone number is (703) 305-4048. The examiner can normally be reached on Monday through Thursday from 7:00 AM to 5:30 PM, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3592.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-1235.

Isis Ghali
Examiner
Art Unit 1615

Gollamudi S. Kishore, PhD
Primary Examiner
Group 1600